

REMARKS

Request for Withdrawal of Finality of November 17, 2003 Office Action

The Examiner is respectfully requested to reconsider and withdraw the finality of the Office Action dated November 17, 2003. It is respectfully submitted that the Office Action was prematurely made final notwithstanding that the Examiner's rejection of claims 76 and 77 was based, in part, on U.S. Patent No. 5,001,994 to Morimoto et al., which is prior art newly cited and applied by the Examiner and not cited in an information disclosure statement filed under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p). Neither claim 76 nor claim 77 was amended by the prior response, filed October 20, 2003. MPEP 706.07(a) specifically states that "a second or subsequent action on the merits in any application or patent undergoing reexamination proceedings will not be made final if it includes a rejection, on newly cited art, other than information submitted in an information disclosure statement filed under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p), of any claim not amended by applicant or patent owner in spite of the fact that other claims may have been amended to require newly cited art."

Objection to the Drawings

The Examiner continues to maintain the objection to the drawings under 37 C.F.R. §1.83(a) for allegedly failing to show every feature of the invention specified in the claims. The Examiner specifically notes the claims recite the following features that are allegedly not shown in the drawings: (1) the specific type of dryer, e.g. "direct concurrent flow dryers, horizontal single, double and triple pass indirect dryers, and vertical counter flow rotating disk indirect dryers" (e.g., claims 41-43); (2) reacting scavenged exhaust gases with a reactive material (e.g., claims 15-18, 47 and 48); and (3) mixing and pulverizing a dried mixture of organic waste and coal combustion product (e.g., claims 75-77).

Applicants believe that a drawing showing such features is not necessary for a proper understanding of the subject matter sought to be patented and, therefore, is not required. In the event that the Examiner continues to require a new and/or amended drawing, Applicants request delay of such submission until indication of an allowable independent claim.

Rejection of claims 11-15, 35-43, 45 and 46 under 35 U.S.C. §103(a) over Wurtz (U.S. 4,997,572) in view of Zauderer (U.S. 6,048,510)

Claims 11-15, 35-43, 45 and 46 remain rejected under 35 U.S.C. §103(a) as allegedly be rendered obvious by Wurtz (U.S. 4,997,572) in view of Zauderer (U.S. 6,048,510). Reconsideration and withdrawal of this ground of rejection is respectfully requested.

Independent claim 11 requires liberation of ammonia by drying a mixture of organic waste/coal combustion by-product/alkaline additive and independent claim 35 requires liberation of ammonia by drying a mixture of organic waste and a coal combustion by-product. Each of these claims further requires introducing the liberated ammonia into a coal burner of a coal burning power plant. The present invention has important beneficial environmental consequences. It provides a process that transforms organic waste into a multi-use end product and utilizes what would otherwise be a polluting by-product of that process, i.e., ammonia, as an agent that effectively helps to eliminate yet another pollutant (NOx) generated by the combustion of coal. Moreover, where the organic waste is treated with, for example, fly ash or another by-product from an industrial process, it also effectively consumes something that may itself also be a source of environmental contamination.

While Wurtz teaches that ammonia is liberated from the process disclosed therein, Wurtz does not provide any teaching or suggestion of what to do with that liberated ammonia. It is simply vented to the air. Zauderer teaches that ammonia may be added to the exhaust gas streams from the combustion of fossil fuels, for the purpose of reducing NOx. Zauderer does not teach or suggest that the ammonia can be gaseous ammonia liberated from organic waste treated with a coal combustion by-product or both a coal combustion by-product and an alkaline material.

Absent the instant specification, there is absolutely no suggestion in either Wurtz or Zauderer that would motivate one of ordinary skill in the art to use the specific source of ammonia, as recited in independent claims 11 and 35 (from which all of the other rejected claims depend either directly or indirectly), to reduce NOx in a coal burner. One of ordinary skill in the art would not be motivated to modify Wurtz (in view of Zauderer) to include a further step of introducing the ammonia generated by the Wurtz process into an exhaust gas stream from the combustion of a fossil fuel to reduce NOx therein, nor would it be obvious to modify Zauderer (in view of Wurtz) to include the preliminary steps of treating the organic waste as claimed to generate ammonia used in the process of Zauderer.

The Examiner states that it is the “secondary reference of Zauderer which is modifying the primary reference of Wurtz” and that “[t]he applicant appears to be putting forth the [erroneous] argument of why an individual of ordinary skill in the art would take the secondary reference of Zauderer and modify it with the primary reference of Wurtz.” Applicants understand the Examiner to be alleging that it would be obvious to modify the process of Wurtz by including a step of introducing the liberated ammonia into an exhaust gas stream from the combustion of a fossil fuel, because Zauderer teaches that ammonia is a cheaper alternative to urea for use as an agent to reduce NOx pollutants to nitrogen gas.

First, Wurtz does not describe or suggest doing anything with the gaseous ammonia generated by the Wurtz process, other than merely venting it to the atmosphere. Absent the benefit of hindsight, one of ordinary skill in the art would simply not find any motivation from Wurtz to further utilize that ammonia to reduce NOx exhaust gases generated by the combustion of coal. That ammonia may be a cheaper alternative to urea does not provide the requisite motivation to further react the ammonia generated by Wurtz with NOx in a coal combustion exhaust gas stream. Moreover, contrary to the Examiner’s assertion, Zauderer prefers urea, because, “[w]hile ammonia is somewhat more effective in reducing NO_x, and less costly than urea, *ammonia’s toxicity and handling problems tend to make urea (also known as carbamide) the preferred material for the present invention.*”

Furthermore, Zauderer discloses injecting the reducing agent into the combustion gas stream in the form of atomized droplets of an aqueous solution containing the reducing agent. Given the fact that ammonia is not even a preferred reducing agent in Zauderer, one would be even less motivated to modify Wurtz in view of Zauderer, because it would entail the further step of forming an aqueous solution from the ammonia generated by the Wurtz process and then further atomizing this aqueous solution with the use of specially designed atomizing injectors as taught by Zauderer. The direct injection into coal combustion gaseous effluents of gaseous ammonia, which is formed by the Wurtz process, is simply not taught or suggested by Zauderer.

Therefore, the combination of Wurtz in view of Zauderer does not render the claimed invention *prima facie* obvious. Therefore, the rejection is improper and withdrawal thereof is respectfully requested.

Rejection of claims 49-51, 59-61, 64-66 and 72 under 35 U.S.C. §103(a) over Wurtz (U.S. 4,997,572) in view of Baer et al. (U.S. 5,447,703)

Claims 49-51, 59-61, 64-66 and 72 remain rejected under 35 U.S.C. §103(a) as allegedly being rendered obvious by Wurtz (U.S. 4,997,572) in view of Baer et al. (U.S. 5,447,703). Reconsideration and withdrawal of this ground of rejection is respectfully requested.

Claims 49-51 depend from independent claim 35, which requires introducing liberated ammonia into the coal burner of a coal burning power plant. The combination of Wurtz and Baer et al. does not teach or suggest this step. Certainly Wurtz, which merely teaches venting of the generated ammonia, does not suggest this step or motivate one skilled in the art to utilize the ammonia in any specific manner, let alone to reduce NOx in coal combustion exhaust gases. Baer et al. discloses at col. 7, lns. 61-64, that ammonia or urea may be injected into the gases between the combustion chamber and cyclone. Baer et al. provides absolutely no guidance as to the source of this ammonia or urea. Absent the instant specification, there is absolutely no suggestion in either Wurtz or Baer et al. that would motivate one of ordinary skill in the art to use the specific source of ammonia, as recited in independent 35, to reduce NOx in a coal burner. Claims 64-66 and 72 also require an ammonia feed comprising ammonia liberated from the organic waste upon drying a mixture of organic waste and a coal combustion by-product. The combination of Wurtz and Baer et al. is similarly deficient in respect to these claims.

Claims 59-61 require forming an “organic waste-coal combustion by-product mixture” drying that mixture, combining that mixture with coal and feeding the resultant mixture to a coal burner of a coal burning power plant. Wurtz teaches merely mixing a coal combustion by-product with organic waste. There is no mention in Wurtz that the resultant product may be further mixed with coal, let alone fed to a coal burner of a coal burning power plant. Nor is there any suggestion in Wurtz to use that product in combination with coal as a source of fuel in a coal burning power plant. Baer et al. merely teaches burning, in the presence of marble, coal and possibly other waste products such as municipal waste, etc., to reduce the amount of noxious gases generated. Baer et al. does not teach or suggest combining coal and organic waste/coal combustion by-product that has been mixed and dried to at least 50% solids content to form a separate product and using the combined coal and dried organic waste/coal combustion product as fuel for a coal-burning power plant. Moreover, Wurtz discloses that the product formed therein is useful as a soil conditioner

and/or a fertilizer supplement. It is respectfully submitted that one would not find motivation from these uses to combine the product with coal and using it as a fuel.

Therefore, the combination of Wurtz in view of Baer et al. does not render the claimed invention *prima facie* obvious. Therefore, the rejection is improper and withdrawal thereof is respectfully requested.

Rejection of claims 76 and 77 under 35 U.S.C. §103(a) over Baer et al. in view of Morimoto et al. (U.S. 5,001,994)

Claims 76 and 77 have been rejected under 35 U.S.C. §103(a) as allegedly being rendered obvious by Baer et al. (U.S. 5,447,703) in view of Morimoto et al. (U.S. 5,001,994)(newly cited). Reconsideration and withdrawal of this ground of rejection is respectfully requested.

As discussed above, Baer et al. merely teaches burning, in the presence of marble, coal and possibly other waste products such as municipal waste, etc., to reduce the amount of noxious gases generated. Baer et al. does not teach or suggest combining coal and organic waste/coal combustion by-product/alkaline additive to form a separate product and using the combined coal and dried organic waste/coal combustion by-product/alkaline additive product as a fuel for a coal-burning power plant.

Morimoto et al. does not alleviate the deficiencies of Baer et al. Morimoto et al. is cited merely for its teaching of burning pulverized coal. Morimoto et al. does not teach or suggest forming a separate dried organic waste/coal combustion by-product/alkaline additive product and combining that product with coal for use as a feed in a coal burning power plant.

Therefore, the combination of Baer et al. and Morimoto et al. does not render the claimed invention *prima facie* obvious. Therefore, the rejection is improper and withdrawal thereof is respectfully requested.

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CONCLUSION

It is respectfully submitted that the subject application is now in condition for allowance, which action is earnestly solicited.

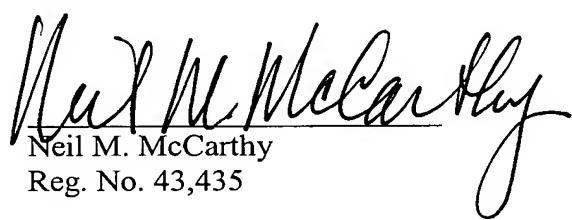
The Examiner is invited, upon consideration of the foregoing response, to contact Applicant's representative to discuss any issue that would expedite allowance of the subject application.

The Commissioner is authorized to charge any fees required under 37 C.F.R. §1.16 and/or §1.17 in connection with this filing, or to credit any overpayments, to Deposit Account 11-0600.

Respectfully submitted,

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